PayPal

Order Management Integration Guide

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A usage Professional Uniquement
Disponible en Anglais uniquement pour l'instant.

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PayPal Order Management Integration Guide

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Preface

This Document

This release of the *PayPal Order Management Integration Guide*, a document that describes the PayPal features for managing orders, such as Payment Data Transfer (PDT), Instant Payment Notification (IPN), and Downloadbale History Log, replaces the version released in June, 2005.

This document replaces portions of the *Merchant User Manual and Integration Guide* issued in April, 2005.

Intended Audience

This document is written for merchants who use PayPal to manage order information.

Organization of This Document

Chapter 1, "Introduction," gives a brief overview of the PayPal features for order management discussed in this guide.

Chapter 2, "Payment Data Transfer," describes how PDT works and how to set it up.

Chapter 3, "Instant Payment Notification (IPN) ," describes how IPN works and how to set it up.

Chapter 4, "Downloadable History Log," describes the Downloadable History Log and how you can use it to reconcile payment transactions.

Appendix A, "IPN and PDT Variables," is a detailed description of all variables and values returned by IPN or PDT.

Appendix B, "Downloadable History Log Columns and Values," describes the columns and values that can be included in the Downloadable History Log.

Notational Conventions

This document uses typefaces to identify the characteristics of text. These typefaces and the characteristics they imply are described below:

Typeface	How Used
serif italics	A document title.
	A term being discussed or defined. For example: A *file* is a readable or writable stream of characters …
	Boolean values (not keywords). For example: The function returns *true* if it encounters an error.

Typeface	How Used
monospaced	Pathnames or file names that appear in body text frames.
	Code-related names that appear in body text frames. Such names are used for functions, callbacks, arguments, data structures, and fields. For example: `AbstractResponseType` is the SOAP response type definition on which all PayPal API response methods are based.
	Components of Internet protocol requests and responses, such as HTTPS and `FORM` variables. For example: The PayPal system uses a `method=POST` request to return IPN status variables related to subscriptions, such as `txn_type`.
Serif bold	User interface names, such as window names or menu selections. For example: On the **Profile** page, click **Email** to confirm your email address.
San-serif oblique	Placeholders used in the context of a format or programming standard or formal descriptions of PayPal system syntax. Placeholders indicate values or names that the reader should provide. Example: For example, `amount` is the variable for a single-item shopping cart, but `amount_`*`X`* is the name of the variable for a multi-item shopping cart. `amount_3` is the item amount for the third item in a multiple-item shopping cart.

To convey additional information, this document may also apply color and underlining to words or phrases that use the typefaces described above. Such use is described below:

Text attribute	How Used
xxxxxx	Hypertext link to a page in the current document or to another document in the set.
xxxxxx	Hypertext link to a URL or that initiates a web action, such as sending mail.

Documentation Problems

If you discover any errors in or have any problems with this documentation, please email us by following the instructions below. Describe the error or problem as completely as possible and give us the document title, the date of the document (located at the foot of every page), and the page number or page range.

To contact Customer Service about documentation problems:

1. Go to https://www.paypal.com/.
2. Click **Help** in the upper left corner of the page.
3. Click **Contact Us** in the lower left of the page.
4. Choose **Help by Email**.
5. Complete the form.

1 Introduction

PayPal offers four payment notification methods for backend integration:

- Email
- Reporting Tools
- Instant Payment Notification (IPN)
- Payment Data Transfer (PDT)

Email

You will receive an email notification in the following cases:

- Successful Payment
- Pending Payment
- Cancelled Payment

If you do not want to receive payment notifications via email:

1. Click the **Profile** subtab of the **My Account** tab.
2. Click the **Notifications** link in the **Account Information** column.
3. Find the **Payment Notifications** heading and clear the **I receive PayPal Website Payments and Instant Purchase** checkbox.
4. Click **Save**.

Reporting

PayPal's Reporting Tools provide you with the information you need to effectively measure and manage your business. With PayPal's Reporting Tools, you can:

- Analyze your revenue sources to better understand your customers' buying behavior
- Automate time-consuming bookkeeping tasks
- Accurately settle and reconcile transactions

Available reports:

- **Monthly Account Statements:** View a summary of all credits and debits that have affected your account balance each month.
- **Merchant Sales Reports:** Every week, receive valuable analysis of revenue by sales channel and currency.
- **History Log:** View an online record of your received and sent payments.

- **Downloadable Logs:** Keep track of your transaction history by downloading it into various file formats (suitable for financial settlements).

For more information about PayPal's reports, see http://www.paypal.com/cgi-bin/webscr?cmd=p/xcl/rec/reports-intro-outside.

Differences between Instant Payment Notification (IPN) and Payment Data Transfer (PDT)

PDT's primary function is to display payment transaction details to buyers when they are automatically redirected back to your site upon payment completion; however, there are cases where you will not receive notification of all transactions, such as with pending transactions, refunds, and reversals. For these reasons, or if you are using this data to fulfill orders, PayPal strongly recommends that you also enable Instant Payment Notification (IPN).

Both IPN and PDT send back the same data; however, there are several important differences.

PDT:

- Requires Auto Return to be enabled.
- Auto Return will include an ID that can be used to query PayPal for the complete transaction details.
- It is possible to miss a notification if the user closes the browser before the redirection is complete.

IPN:

- Does not require Auto Return to be enabled.
- At the end of the website payment flow, PayPal POSTs the IPN data asynchronously (i.e. not as part of the website payment flow).
- IPNs will also POST for eCheck clearings, reversals, and refunds.

SSL Not Required for IPN

Because credit card and bank information is not transmitted in Instant Payment Notification (IPN), PayPal does not require Secure Sockets Layer (SSL) to encrypt IPN transmissions.

PayPal-Supported Currencies

The following currencies are supported by PayPal.

TABLE 1.1 PayPal-Supported Currencies, Currency Codes, and Maximum Transaction Amounts

Code	Currency	Maximum Transaction Amount
AUD	Australian Dollar	12,500 AUD
CAD	Canadian Dollar	12,500 CAD
EUR	Euro	8,000 EUR
GBP	Pound Sterling	5,500 GBP
JPY	Japanese Yen	1,000,000 JPY
USD	U.S. Dollar	10,000 USD

2 Payment Data Transfer

Payment Data Transfer (PDT) provides merchants with the ability to display transaction details to buyers who are redirected back to their site upon payment completion.

NOTE: You must enable Auto Return for Website Payments to use Payment Data Transfer. Auto Return brings your buyers back to your website immediately after payment completion. Auto Return applies to PayPal Website Payments, including Buy Now, Donations, Subscriptions, and Shopping Cart. For more information about Auto Return, see the *PayPal Website Payments Standard Integration Guide*.

How PDT Works

Bob is going to purchase a widget from the Widget Warehouse.

Step 1: Bob goes to the Widget Warehouse website, finds the widget he wants, and clicks **Buy Now**.

Globe Industries
Global Industries, Inc
Widget Warehouse
Wooden Widgets
Rubber Widgets
Aluminum Widgets
Steel Widgets
Outdoor Widgets
Indoor Widgets
Automotive Widgets
Plastic Widgets
Titanium Widgets
Widget #019983763
The surprisingly compact Widget #019983763 is a powerful no-compromise solution for widget professionals who are frequently on the road and rarely in the office but who never want to be without the speed and power of an automotive widget. It slices, dices and it will even make bread.
Sale Price: $142.50
Buy Now
Global Industries, Inc | All rights reserved 2003

Step 2: Bob is taken to a PayPal **Payment Details** page which displays the details of the payment he is about to make.

Step 3: Bob enters his PayPal account information into the PayPal Login fields.

Step 4: Bob is then taken to a confirmation page that displays the details of his selection, information about how his automatic payments will be funded, and his shipping information. He clicks **Pay** to complete the payment.

Step 5: A payment confirmation page appears that informs Bob that his payment has been completed and that he is being redirected back to the Widget Warehouse website.

Payments by PayPal
Globe Industries
Global Industries, Inc
Widget Warehouse
You Made A Payment
Your payment for $162.50 USD has been completed.
You are now being redirected to Widget Warehouse
If you are not redirected within 10 seconds click here.

Step 6: A transaction token is passed to the return URL provided by the Widget Warehouse. The Widget Warehouse fetches the transaction token and retrieves the transaction details from PayPal via an HTTP POST. Included in the HTTP post is the identity token that was given to the Widget Warehouse when PDT was enabled.

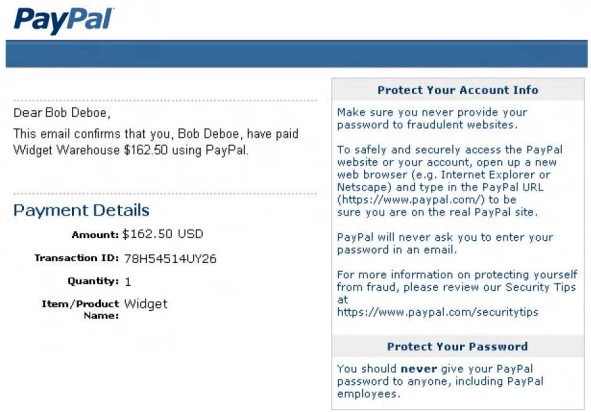
For more information about the PDT identity token, see "Getting and Using the Identity Token" on page 19. For more information about the HTTP POST, see "PDT Notification Synch" on page 20.

Step 7: The Widget Warehouse's Thank You page appears and displays the transaction information, again informing Bob that his transaction has been completed and a receipt for the purchase has been emailed to him. The page also displays payment details, a link to PayPal that Bob can use to view more transaction details if necessary, as well as links that he can use to continue shopping.

For example, as shown in the following diagram: Thank you for your payment. Your transaction has been completed, and a receipt for your purchase has been emailed to you. You may log into your account at www.paypal.com to view details of this transaction.

Globe Industries
Global Industries, Inc
Widget Warehouse
Thank you for your payment.
Your transaction has been completed.
Payment Details
Item: Widget
Amount: $162.50
Email: bdeboe@merchant.tv
Ship to: Bob Deboe
1234 Main Street
Walnut Creek, CA 95599
Please print this page for your records. A receipt for your purchase has also been emailed to you.
Global Industries, Inc | All rights reserved 2003

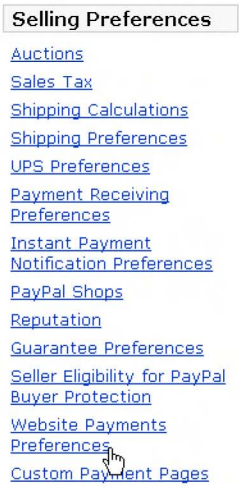
Step 8: Bob receives an email receipt for this transaction, confirming his purchase and including a copy of the payment details, the Widget Warehouse's business information, and his confirmed shipping address.


PayPal
Dear Bob Deboe,
This email confirms that you, Bob Deboe, have paid Widget Warehouse $162.50 using PayPal.
Payment Details
Amount: $162.50 USD
Transaction ID: 78H54514UY26
Quantity: 1
Item/Product Name: Widget
Protect Your Account Info
Make sure you never provide your password to fraudulent websites.
To safely and securely access the PayPal website or your account, open up a new web browser (e.g. Internet Explorer or Netscape) and type in the PayPal URL (https://www.paypal.com/) to be sure you are on the real PayPal site.
PayPal will never ask you to enter your password in an email.
For more information on protecting yourself from fraud, please review our Security Tips at https://www.paypal.com/securitytips
Protect Your Password
You should never give your PayPal password to anyone, including PayPal employees.

Enabling Payment Data Transfer

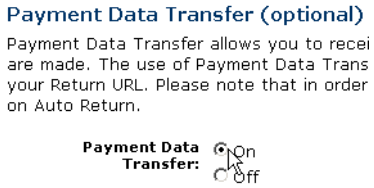
To enable PDT:

1. Click the **My Account** tab.
2. Click the **Profile** subtab.
3. Click the **Website Payment Preferences** link, as shown in the following diagram.



The **Website Payment Preferences** page opens.

4. Click the Payment Data Transfer **On** radio button, as shown in the following diagram.


Payment Data Transfer (optional)
Payment Data Transfer allows you to recei
are made. The use of Payment Data Trans
your Return URL. Please note that in order
on Auto Return.
Payment Data Transfer:
On
Off

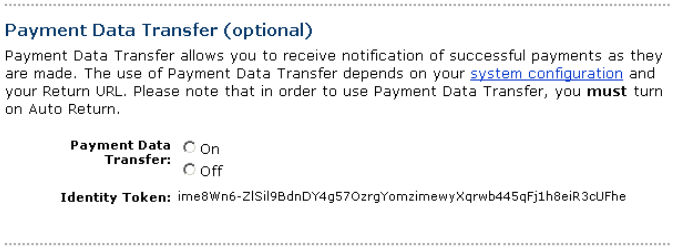
NOTE: You **must** enable Auto Return in order to use Payment Data Transfer. Auto Return can also be enabled from the **Website Payment Preferences** page.

5. Click **Save**.

Getting and Using the Identity Token

When you click **Save** and save your PDT preferences, a message appears at the top of the page indicating that you have successfully saved your preferences. Your identity token also appears in this message.

You will need to pass this identity token, along with the transaction token, to PayPal in order to receive information that confirms that a payment is complete.


Payment Data Transfer (optional)
Payment Data Transfer allows you to receive notification of successful payments as they are made. The use of Payment Data Transfer depends on your system configuration and your Return URL. Please note that in order to use Payment Data Transfer, you must turn on Auto Return.
Payment Data Transfer:
On
Off
Identity Token:
ime8Wn6-ZlSil9BdnDY4g57OzrgYomzimewyXqrwb445qFj1h8eiR3cUFhe

For security, the identity token is not sent to you; however, once you have enabled PDT, it permanently appears below the Payment Data Transfer **On**/**Off** radio buttons on the **Website Payments Preferences** page.

PDT and PayPal Account Optional

The PayPal Account Optional does not require your customers who are new to PayPal to create a PayPal account to complete a purchase—they go through an alternate checkout and have the option to sign up afterward. Customers who already have PayPal accounts will continue to enjoy the privileges of those accounts, such as payment history and integration with eBay Auctions, and their checkout experience will remain the same.

This PayPal Account Optional feature is available for Buy Now, Donations, and Shopping Cart buttons, but not for Subscription buttons.

PayPal Account Optional is enabled by default. If the merchant has turned on Payment Data Transfer and has not disabled PayPal Account Optional, a new user will not be automatically directed back to the merchant website, but will be given the option to return. When the buyer clicks **Continue**, the transaction ID associated with the transaction is sent. The merchant returns the transaction ID, along with their identity token, and PayPal then sends the merchant payment information that confirms that the payment is complete. The buyer is directed back to the merchant site where the transaction information is displayed. However, if the buyer does *not* click **Continue**, they will *not* be directed back to the merchant's site and PDT will not be initiated.

PDT Notification Synch

After you have activated PDT, every time a buyer makes a website payment and is redirected to your return URL, a transaction token is sent via a FORM GET variable to this return URL.

To properly use PDT and display transaction details to your customer, you should read the transaction token from the variable `tx` and retrieve transaction details from PayPal by constructing an HTTPS POST to PayPal. This is called *notification synch* or synchronization.

Constructing the POST

Here are the guidelines for constructing the PDT HTTPS POST to PayPal for notification synch:

1. Your POST must be sent to https://www.paypal.com/cgi-bin/webscr.
2. You must include the `cmd` variable with the value `_notify-synch`:

   ```
   cmd=_notify-synch
   ```

3. You must include the transaction token in the variable `tx` and the value of the transaction token received via PayPal's GET:

   `tx=`*value_of_transaction_token*

4. You must post your identity token using the variable `at` and the value of your PDT identity token:

   `at=`*your_identity_token*

For information about the identity token, see "Getting and Using the Identity Token" on page 19.

PayPal Response to POST

PayPal responds to the post with a single word on one line in the body of the response: SUCCESS or FAIL. When you receive a SUCCESS response, the rest of the body of the response is the transaction details, one per line, in the format *key=value* where *key* and *value* are both be URL-encoded strings. This response data needs to be parsed appropriately and then URL-decoded.

Example successful response:

```
SUCCESS
first_name=Jane+Doe
last_name=Smith
payment_status=Completed
payer_email=janedoesmith%40hotmail.com
payment_gross=3.99
mc_currency=USD
custom=For+the+purchase+of+the+rare+book+Green+Eggs+%26+Ham
...
```

If the response is FAIL, PayPal recommends making sure that:

- The Transaction token is not bad.
- The ID token is not bad.
- The tokens have not expired.

PDT and Auto Return: Messaging to Buyer

When Auto Return, you must display a message on the page displayed by the Return URL that helps the buyer understand that the payment has been made, that the transaction has been completed, and that payment transaction details will be emailed to the buyer. You can display to your customer whatever payment details you feel are appropriate; however, PayPal recommends including the following:

- Item name
- Amount paid
- Payer email
- Shipping address

If you are using PDT to determine when to fulfill an order automatically, confirm that the `payment_status` is **Completed**, since the buyer could use methods such as echecks that do not immediately clear.

For a list of PDT variables, see Appendix A, "IPN and PDT Variables."

Preventing Fraud

In order to prevent fraud, PayPal recommends that your programs verify the following:

- `txn_id` is not a duplicate to prevent someone from reusing an old, completed transaction.
- `receiver_email` is an email address registered in your PayPal account, to prevent the payment from being sent to a fraudulent account.
- Other transaction details, such as the item number and price, to confirm that the price has not been changed.

Code Samples

PayPal has made available code samples that you can use to set up PDT. These samples are available at https://www.paypal.com/us/cgi-bin/webscr?cmd=p/xcl/rec/pdt-code.

There are code samples for the following development environments:

- ASP/VBScript
- ColdFusion
- PERL
- PHP

3 Instant Payment Notification (IPN)

Instant Payment Notification (IPN) allows you to integrate PayPal payments with your website's back-end operations. IPN provides immediate notification and confirmation of PayPal payments you receive, allowing you to:

- Customize your website's response to customer purchases in real-time.
- Track customers through the notification's "pass through" variables.
- Automate your fulfillment operations.
- Store transaction information in your own database.

To activate Instant Payment Notification, you will need to go to your Profile to enter the URL at which you would like to receive notification posts. Once you activate IPN, you will receive an IPN when a payment is first sent which will state the status of the payment (Completed or Pending). If the payment was "Pending," you will receive another IPN when the payment clears, fails, or is denied.

IPN can be seamlessly integrated with each of the PayPal Website Payments solutions — Buy Now Buttons, PayPal Shopping Cart, Subscriptions and Recurring Payments, and Donations — and with regular PayPal Send Money and Mass Pay payments. It lets you focus on selling, not on manually tracking your orders.

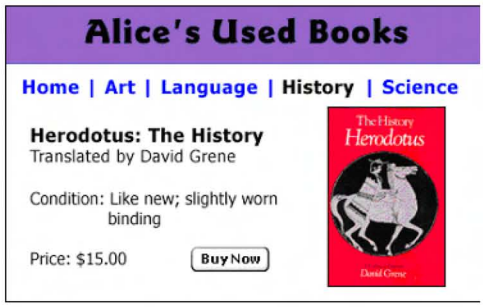
How It Works

When a customer makes a payment to you or a payment is reversed or refunded, PayPal will post a notification to your server at the URL you specified. Included in this notification will be all of your customer's payment information (e.g. customer name, payment amount) as well as a piece of encrypted code. When your server receives a notification, it will then post the information, including the encrypted code, back to a secure PayPal URL. PayPal will authenticate the transaction and send confirmation of its validity back to your server.

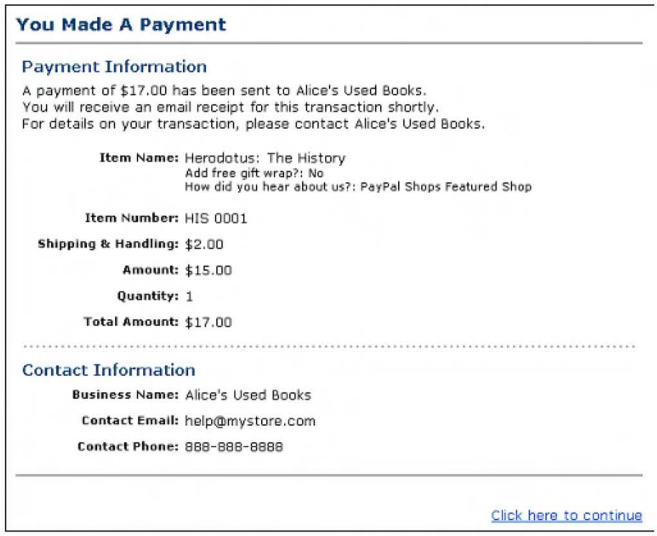
After you have activated Instant Payment Notification, your server will be sent a notification every time you receive a payment. This notification will be sent as a hidden "FORM POST" to the URL you specified, and will include all of the payment information. The FORM variables for these notifications are available in Appendix A of this manual.

How IPN POSTs Are Sent

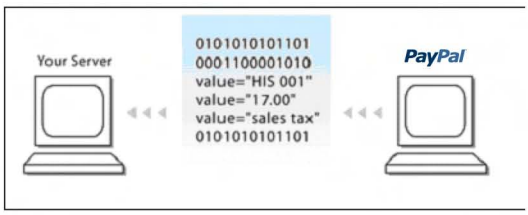
Step 1: Your buyer comes to your website and clicks on a PayPal **Buy Now** button to make a purchase.



Step 2: After your buyer checks the payment details and sends the payment, he will see a confirmation page, as shown in the following diagram.

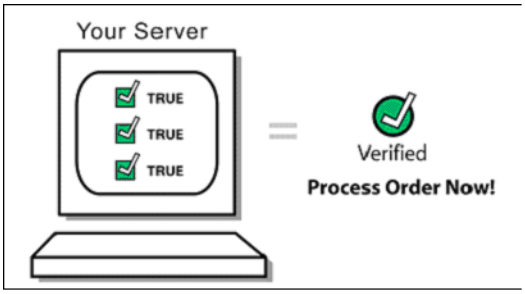

You Made A Payment
Payment Information
A payment of $17.00 has been sent to Alice's Used Books.
You will receive an email receipt for this transaction shortly.
For details on your transaction, please contact Alice's Used Books.
Item Name: Herodotus: The History
Add free gift wrap?: No
How did you hear about us?: PayPal Shops Featured Shop
Item Number: HIS 0001
Shipping & Handling: $2.00
Amount: $15.00
Quantity: 1
Total Amount: $17.00
Contact Information
Business Name: Alice's Used Books
Contact Email: help@mystore.com
Contact Phone: 888-888-8888
Click here to continue

Step 3: At the time the payment is made, PayPal will post a notification to your server at the URL you specified. All of your customer's payment information and a piece of encrypted code will be included in this notification.



Step 4: On receiving the notification, your server validates the notification for the security of your customer and your payment. There are two ways to validate the notification. For details, see "IPN Notification and Notification Validation " on page 26.

Step 5: After verifying the correctness of the data from IPN, you can update your database with the IPN data and process the purchase.



Setting Up IPN

To set up IPN:

1. Log in to your Business or Premier PayPal account.
2. Click the **Profile** subtab.
3. Click the **Instant Payment Notification Preferences** link in the **Selling Preferences** column.
4. Click **Edit.**
5. Click the checkbox and enter the URL at which you would like to receive your IPN Notifications.
6. Click **Save.**

Alternatively, you can activate IPN by including the `notify_url` field in your PayPal button. This field specifies the URL of a script that can process the IPN.

For a complete list of IPN fields, variables, and sample code, see Appendix A, "IPN and PDT Variables." Code samples for the following development environments are also available on the PayPal website at http://www.paypal.com/cgi-bin/webscr?cmd=p/xcl/rec/ipn-code-outside:

- ASP.Net/C#
- ASP/VBScript
- ColdFusion
- Java/JSP
- PERL
- PHP

IPN Notification and Notification Validation

After your server receives Instant Payment Notification, you must confirm that you received it. This is known as *notification validation*, which is a means for PayPal to help you prevent spoofing or "man-in-the-middle" attacks.

You have two methods by which you can validate the notification:

1. Sending a shared secret, described in "Shared Secret Validation" on page 27. PayPal recommends this method because it decreases network traffic to and from your website. Shared secret validation is appropriate:
   - if you are *not* using a shared website hosting service.
   - if you have enabled SSL on your web server.
   - if you are using PayPal Encrypted Website Payments.
   - if you use the `notify_url` variable on each individual payment transaction.
2. Sending a `POST` back to PayPal after you receive the IPN, described in "HTTPS Postback to PayPal" on page 27. Postback is appropriate:
   - if you rely on a shared website hosting service
   - if you do not have SSL enabled on your web server

Both methods rely on the concept of a notification URL, which is described in the next section.

Shared Secret Per Transaction or by Profile Setting

The URL to which PayPal posts IPN data is called the *notification URL*. It can be set either with each individual payment transaction or globally in your Profile for all transactions:

- **Per Transaction:** If you want to receive payment notifications for different payments at different URLs (for example, if you need to separate payments to different websites you run), use the `notify_url` variable to pass the notification URL. With each payment PayPal saves the value of the `notify_url` for a specific payment, and any subsequent updates to that payment (such as a cleared eCheck) are sent to that `notify_url`. When you pass a `notify_url` in your post, it overrides the setting in your Profile.
- **Profile Setting.** If you want to receive your IPNs at only a single URL, enter that URL in the **Preferences** section of your Profile.

Likewise, the shared secret you can use to validate that you have received an IPN can be set either with each individual payment transaction or globally in your Profile for all transactions:

- **Per Transaction:** If you want a distinct shared secret for each notification for each payment, append a `FORM` variable name and a shared secret value to the value of the `notify_url` variable. When you pass a shared secret in your payment post, it overrides the setting in your Profile.
- **Profile Setting.** If you want the same shared secret for each and every transaction, enter that shared secret in the **Preferences** section of your Profile.

Shared Secret Validation

The first and recommended method for notification validation is to use a shared secret on individual payment transactions. Add a shared secret variable and value to the value of the `notify_url` variable to which the IPN data is posted after a payment is made. The shared secret consists of the following:

`notify_url=`*`yourIPNnotificationURL?shared_secret_variable_name=shared_secret_value`*

where:

yourIPNNotificationURL is a URL on your website at which you want to receive notification.

shared_secret_variable_name is any variable name you want.

shared_secret_value is the shared secret itself

For example, the value of `notify_url` variable might look like this:

```
notify_url=https://www.mysite.com/PP-IPN-Validate.cfm?secret=shhhhhhh
```

Security Considerations with Shared Secret Validation

To ensure the security of your shared secret, you should use Encrypted Website Payments (EWP). For information about EWP, see the *PayPal Standard Checkout Integration Guide*.

The value of the shared secret is not encrypted; it is in clear text for easier processing. Therefore, the shared secret value is recorded in your web server's access log. Be sure to practice proper security for your server access logs. If you use a web server hosting service, ensure that your provider practices proper security of your data.

IMPORTANT: *Your notification URL should check the validity of the returned shared secret and flag for investigation any transaction that does not have the correct shared secret.*

HTTPS Postback to PayPal

The second method for validating your receipt of an IPN is to post back to PayPal the exact variables and values you received in the IPN.

Constructing the POST

Here are the guidelines for constructing the IPN HTTPS POST to PayPal for notification validation.

NOTE: You can implement IPN without SSL, but PayPal recommends against doing so.

1. Your POST must be sent to https://www.paypal.com/cgi-bin/webscr.
2. You must include the variable `cmd` with the value `_notify-validate`:

   ```
   cmd=_notify-validate
   ```

3. You must post all the form variables you received exactly as you received them.

PayPal Response to Postback

PayPal responds to the postback with a single word in the body of the response: `VERIFIED` or `INVALID`.

When you receive a `VERIFIED` response, perform the following checks:

1. Check that the `payment_status` is **Completed**.
2. If the `payment_status` is **Completed**, check the `txn_id` against the previous PayPal transaction you have processed to ensure it is not a duplicate.
3. After you have checked the `payment_status` and `txn_id`, make sure the `receiver_email` is an email address registered in your PayPal account.
4. Check that the price, `mc_gross`, and currency, `mc_currency`, are correct for the item, `item_name` or `item_number`.
5. Check the the shared secret returned to you is correct.

Once you have completed the above checks, you can update your database based on the information provided.

If you receive an `INVALID` response, you should investigate. In some cases, this response is caused by an IPN error, possibly from a change in the IPN format. To determine if it is an IPN error, first examine your code. If you need further assistance, go to http://www.paypal.com/wf/, click the Seller Tools topic, and click **Instant Payment Notification (IPN)**.

Using IPN with Multiple Currencies

With multiple currencies, you can accept payments in any of the PayPal-supported currencies (see Table 1.1, “PayPal-Supported Currencies, Currency Codes, and Maximum Transaction Amounts” on page 13). As a result, your IPNs will then include information about the currency of the payment. The following overview explains how IPN interacts with multiple currencies.

NOTE: If you are using one of PayPal’s Website Payments solutions (e.g. PayPal Shopping Cart), and would like to be paid in a currency other than U.S. Dollars, you will need to set up your buttons for your currency of choice.

payment_gross and payment_fee

These variables reflect the amount received and corresponding fee of U.S. Dollar (USD) payments. If the amount received and fee deducted are in a currency other than USD, the variables will still appear in your IPN, but will have no values in them.

NOTE: `payment_fee` is not always present in IPNs, such as when a payment is pending.

These values are absent for non-USD payments so that IPN scripts will not process these amounts as USD. However, legacy IPN scripts will continue to work as before as long as the merchant only receives USD payments.

Examples of Multi-currency IPN Variables

IPNs that use the `payment_gross` variable will have the following multi-currency variables added. The variables `mc_gross` and `mc_fee` will not be added to IPNs with `txn_type`: `subscr_signup`, `subscr_cancel`, `subscr_modify`, `subscr_failed`, or `subscr_eot`.

- `mc_gross`: Full amount of payment received, before transaction fee.

NOTE: If payment is in USD, the `payment_gross` value equals `mc_gross`.

- `mc_fee`: Transaction fee associated with the payment. Variable function like `payment_fee` variable (variable does not appear when payment pending, and so on).

NOTE: If payment is in USD, the `payment_fee` value equals `mc_fee`.

- `mc_currency`: Currency of `mc_gross`, `mc_fee`, `payment_gross`, and `payment_fee` amounts. Possible values are detailed in Table 1.1, "PayPal-Supported Currencies, Currency Codes, and Maximum Transaction Amounts" on page 13.
- For subscription IPNs, such as signup, cancel, modify, failed, and eot, `mc_currency` is the currency of the subscription, rather than the currency of the payment.

Example 1

If a user with a USD balance receives a $100 USD payment, the following variables will be used for the payment:

- `mc_gross` = `payment_gross`
- `mc_fee` = `payment_fee`

***EXAMPLE 3.1* Multi-currency IPN: USD Payment**

```
payment_status = Completed
payment_gross = 100
payment_fee = 3.00
mc_gross = 100
mc_fee = 3.00
mc_currency = USD
```

Example 2

f a user with a CAD balance receives a $100 CAD payment, the following variables will be used for the payment:

- `mc_gross` and `mc_fee` have values.
- `payment_gross` and `payment_fee` are blank.

EXAMPLE 3.2 Multi-currency IPN: CAD Payment

```
payment_status = Completed
```

```
payment_gross =
payment_fee =
mc_gross =100
mc_fee = 3.00
mc_currency = CAD
```

Example 3

If the account is set to automatically convert payments, these variables will be used to show the conversion. This example is for a user with a USD balance who receives a payment of 100 GBP:

EXAMPLE 3.3 Mutli-currency IPN: Automatic Conversion of GBP Payment

```
payment_status = Completed
payment_gross =
payment_fee =
mc_gross = 100
mc_fee = 3.00
mc_currency = GBP
settle_amount = 145.5
settle_currency = USD
exchange_rate = 1.5
```

Example 4

If a payment received is pending due to pending_reason = multi_currency, the first IPN received would not have the `settle_amount`, `settle_currency`, or `exchange_rate`.

***EXAMPLE 3.4* Mutli-currency IPN: Pending Payment**

```
payment_status = Pending
pending_reason = multi_currency
payment_gross =
mc_gross = 100
mc_currency = GBP
```

The second IPN contains information about settling the payment. If the payment is accepted into the account's primary currency, which is USD in the following example:

EXAMPLE 3.5 Pending - Convert to Primary Currency

```
payment_status = Completed
payment_gross =
payment_fee =
mc_gross = 100
mc_fee = 3.00
mc_currency = GBP
settle_amount = 145.5
settle_currency = USD
exchange_rate = 1.5
```

If the payment is accepted into a balance of the same currency:

EXAMPLE 3.6 Pending - Accept to Currency Balance

```
payment_status = Completed
payment_gross =
payment_fee =
mc_gross = 100
mc_fee = 3.00
mc_currency = GBP
```

If the payment is denied:

EXAMPLE 3.7 Pending - Denied

```
payment_status = Denied
payment_gross =
mc_gross = 100
mc_currency = GBP
```

NOTE: If a user receives a payment into a currency balance and later converts this amount into another currency balance, the corresponding currency conversion transaction has no IPN.

Dispute Notification

Buyers can register claims about payments; such claims are called *cases.* PayPal notifies merchants about new cases with email and with IPN.

There are two kinds of cases:

- Complaint: A buyer has used the PayPal Resolution Center to register a claim about a payment to a merchant.

  NOTE: After notification about a complaint claim, merchants must log in to PayPal to use the Resolution Center to respond to the case.

- Chargeback: A buyer has filed a complaint with a credit card company that has resulted in a chargeback. The credit card company notifies PayPal about the reason for the chargeback. After investigating the case, PayPal notifies the merchant of any action required.

IPN variables for cases include the type of case, the reason, and other information about the case. For details about all variables and their possible values, see "Dispute Notification Variables" on page 54.

4 Downloadable History Log

PayPal's Downloadable History Log makes it easier and more efficient to track, sort and print transactions from your PayPal account.

Download your transaction history into one of several available file formats outlined in this document so that you can view and store your transaction history offline.

Once you've downloaded your history log, you can analyze the data to learn more about your business and customer needs, as well as generate customer lists, financial statements and customized reports.

This manual is designed to provide you a comprehensive overview of the information and instructions you need to get the most from PayPal's Downloadable History Log feature.

Customizing Your Downloadable History Log

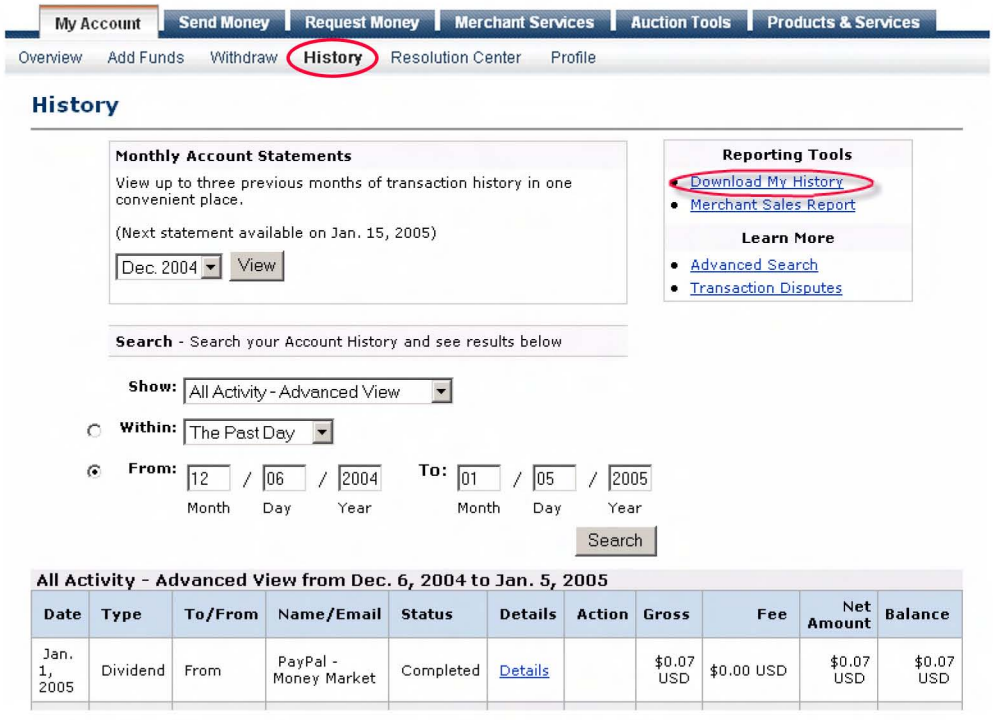
Business or Premier PayPal account holders can customize their Downloadable History Log at any time.

- Add info to, or remove from, your Downloadable History Log
- Modify how information is displayed in your account

For example, you can display a buyer's shipping address in a single column rather than multiple columns. Here's how:

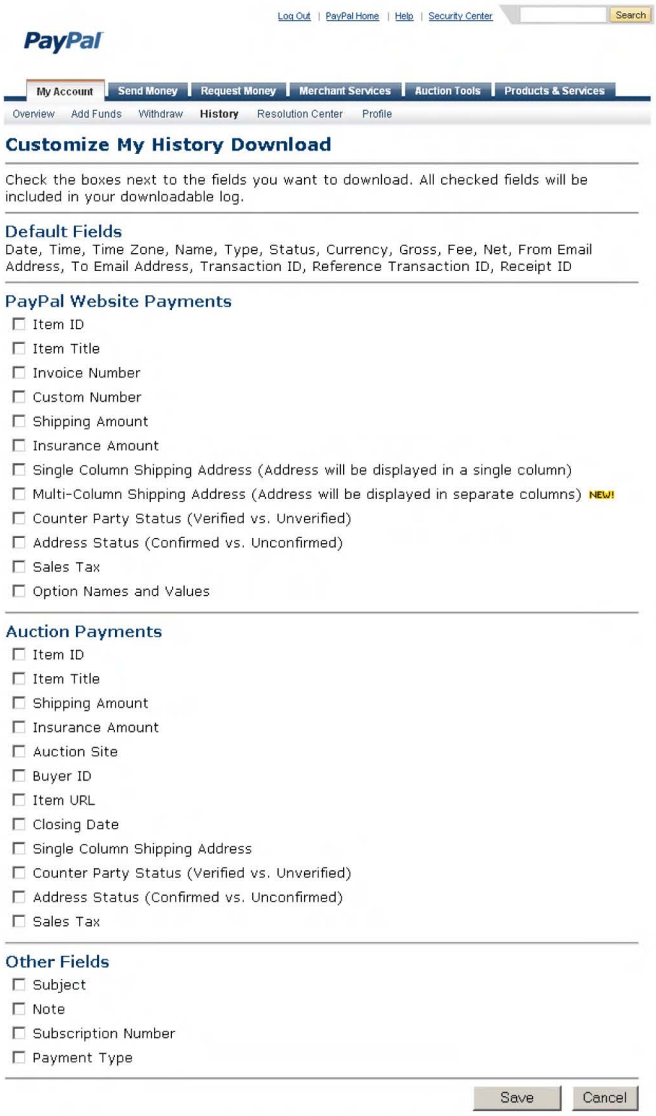
1. Log in to your PayPal account.
2. Click the **History** subtab under the **My Account** tab.
3. Click the **Download My History** link in the **Reporting Tools** box.

FIGURE 4.1 The Download My History Link


My Account
Send Money
Request Money
Merchant Services
Auction Tools
Products & Services
Overview
Add Funds
Withdraw
History
Resolution Center
Profile
History
Monthly Account Statements
View up to three previous months of transaction history in one convenient place.
(Next statement available on Jan. 15, 2005)
Dec. 2004
View
Reporting Tools
Download My History
Merchant Sales Report
Learn More
Advanced Search
Transaction Disputes
Search - Search your Account History and see results below
Show: All Activity - Advanced View
Within: The Past Day
From: 12 / 06 / 2004 Month Day Year
To: 01 / 05 / 2005 Month Day Year
Search
All Activity - Advanced View from Dec. 6, 2004 to Jan. 5, 2005
Date Type To/From Name/Email Status Details Action Gross Fee Net Amount Balance
Jan. 1, 2005 Dividend From PayPal - Money Market Completed Details $0.07 USD $0.00 USD $0.07 USD $0.07 USD

4. Click the **Customize My History Download** link.

FIGURE 4.2 Customize My History Download



5. A list of items appears. This is where you can select your preferences to customize your Downloadable History Log.

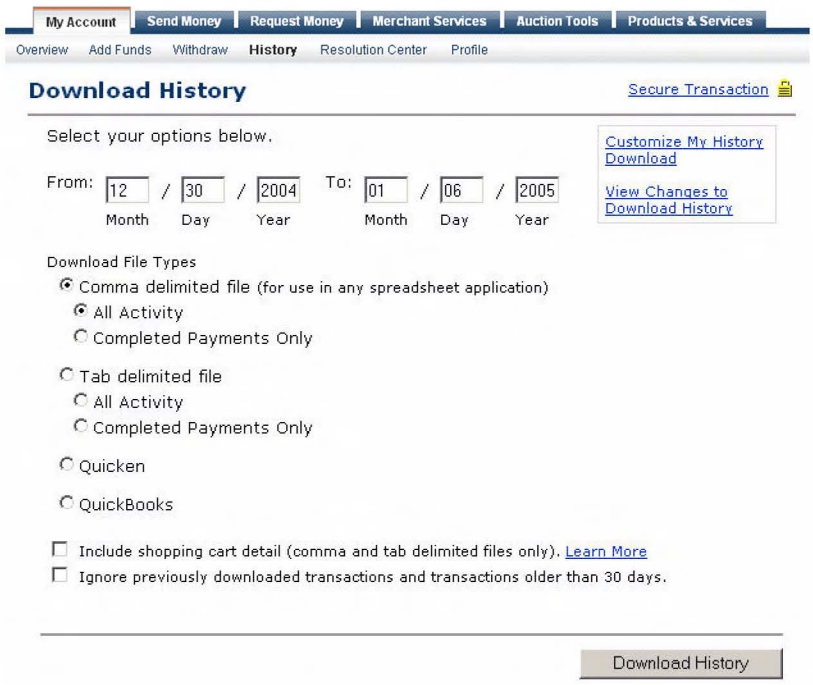
6. After modifying your selections, click **Save**.

Downloading Your History

Follow the instructions below to download your transaction history.

1. Log in to your PayPal account.
2. Click the **History** subtab under the **My Account** tab.
3. Click the **Download My History** link in the **Reporting Tools** box.

FIGURE 4.3 Download History Page



4. On the next page, specify the date range. (You can check one of the boxes below to ignore previously downloaded transactions and transactions older than 30 days).
5. Choose the desired file format.
6. Select whichever of the two checkboxes that apply.
7. Click the Download History button and save the file to a memorable location for easy reference later.

Viewing Your Downloaded Log

As detailed in the previous section, your Downloadable History Log can be saved and viewed in any of the following file formats:

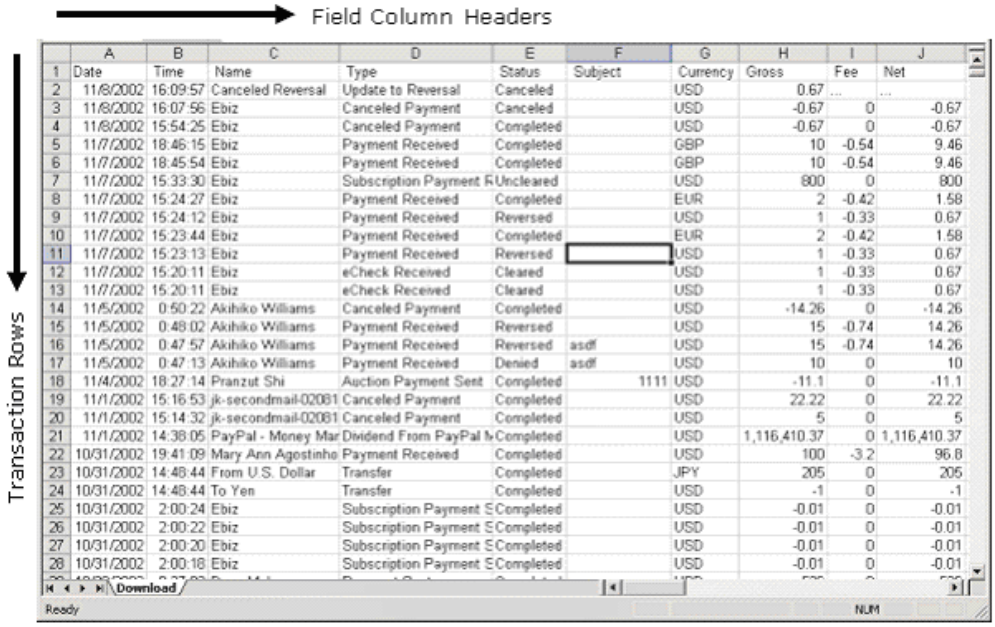
- Comma-separated value (CSV) plain text file for use with spreadsheet programs
- Tab-delimited plain text file
- Intuit (Quicken/QuickBooks) file

For automated file processing and reconciliation applications, PayPal recommends you use comma-delimited or tab-delimited formats. Comma-delimited and tab-delimited files may contain fields with punctuation and spaces.

Those fields will be automatically double-quoted (") in the file output.

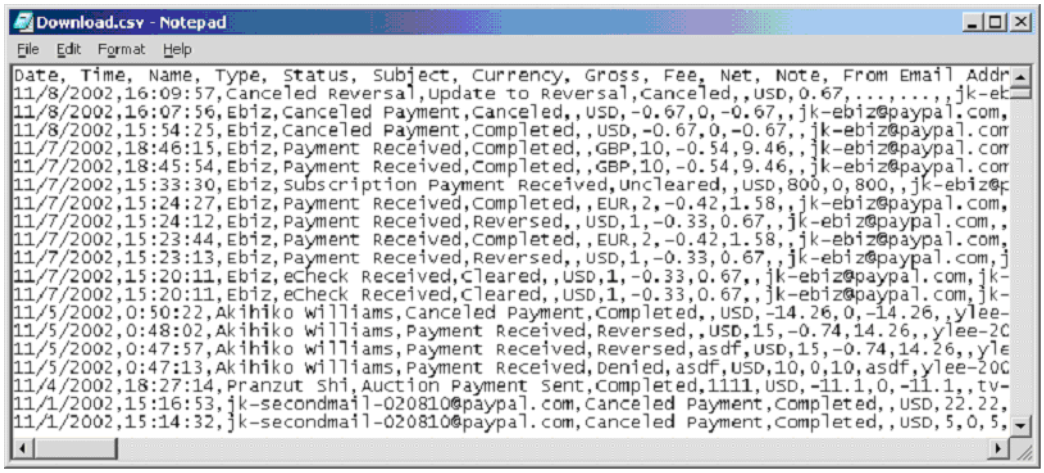
When viewing comma-delimited or tab-delimited file formats in spreadsheet applications (like Excel), the log files display field column headers across the first row, and data values for individual transactions in subsequent rows. Each row is separated by a carriage return.

FIGURE 4.4 A Comma-Separated Value History log in a spreadsheet file.



	A	B	C	D	E	F	G	H	I	J
1	Date	Time	Name	Type	Status	Subject	Currency	Gross	Fee	Net
2	11/8/2002	16:09:57	Canceled Reversal	Update to Reversal	Canceled		USD	0.67	...	...
3	11/8/2002	16:07:56	Ebiz	Canceled Payment	Canceled		USD	-0.67	0	-0.67
4	11/8/2002	15:54:25	Ebiz	Canceled Payment	Completed		USD	-0.67	0	-0.67
5	11/7/2002	18:46:15	Ebiz	Payment Received	Completed		GBP	10	-0.54	9.46
6	11/7/2002	18:45:54	Ebiz	Payment Received	Completed		GBP	10	-0.54	9.46
7	11/7/2002	15:33:30	Ebiz	Subscription Payment R	Uncleared		USD	800	0	800
8	11/7/2002	15:24:27	Ebiz	Payment Received	Completed		EUR	2	-0.42	1.58
9	11/7/2002	15:24:12	Ebiz	Payment Received	Reversed		USD	1	-0.33	0.67
10	11/7/2002	15:23:44	Ebiz	Payment Received	Completed		EUR	2	-0.42	1.58
11	11/7/2002	15:23:13	Ebiz	Payment Received	Reversed		USD	1	-0.33	0.67
12	11/7/2002	15:20:11	Ebiz	eCheck Received	Cleared		USD	1	-0.33	0.67
13	11/7/2002	15:20:11	Ebiz	eCheck Received	Cleared		USD	1	-0.33	0.67
14	11/5/2002	0:50:22	Akihiko Williams	Canceled Payment	Completed		USD	-14.26	0	-14.26
15	11/5/2002	0:48:02	Akihiko Williams	Payment Received	Reversed		USD	15	-0.74	14.26
16	11/5/2002	0:47:57	Akihiko Williams	Payment Received	Reversed	asdf	USD	15	-0.74	14.26
17	11/5/2002	0:47:13	Akihiko Williams	Payment Received	Denied	asdf	USD	10	0	10
18	11/4/2002	18:27:14	Pranzut Shi	Auction Payment Sent	Completed	1111	USD	-11.1	0	-11.1
19	11/1/2002	15:16:53	jk-secondmail-02081	Canceled Payment	Completed		USD	22.22	0	22.22
20	11/1/2002	15:14:32	jk-secondmail-02081	Canceled Payment	Completed		USD	5	0	5
21	11/1/2002	14:38:05	PayPal - Money Mar	Dividend From PayPal M	Completed		USD	1,116,410.37	0	1,116,410.37
22	10/31/2002	19:41:09	Mary Ann Agostinho	Payment Received	Completed		USD	100	-3.2	96.8
23	10/31/2002	14:48:44	From U.S. Dollar	Transfer	Completed		JPY	205	0	205
24	10/31/2002	14:48:44	To Yen	Transfer	Completed		USD	-1	0	-1
25	10/31/2002	2:00:24	Ebiz	Subscription Payment S	Completed		USD	-0.01	0	-0.01
26	10/31/2002	2:00:22	Ebiz	Subscription Payment S	Completed		USD	-0.01	0	-0.01
27	10/31/2002	2:00:20	Ebiz	Subscription Payment S	Completed		USD	-0.01	0	-0.01
28	10/31/2002	2:00:18	Ebiz	Subscription Payment S	Completed		USD	-0.01	0	-0.01

FIGURE 4.5 A comma-delimited history log in a text file



Once the file is formatted, import the file into whatever program you use for reconciliation purposes.

A IPN and PDT Variables

IPN and PDT variables are case-sensitive. All values are lowercase, except those for `payment_status`, which have an initial capital letter.

Data Type, Maximum Field Lengths, and URL Encoding

IPN posts contain only alphanumeric characters.

The maximum field length for each returned field is 127 characters, with the following exceptions:

- `custom` has a maximum length of 255 characters.
- `memo` has a maximum length of 255 characters.
- The unique PayPal Transaction ID (`txn_id` variable) is 17 characters long.

Values posted by IPN are URL-encoded. For example, the colon ":" in "http://" is encoded as %3A in the IPN post.

About These Tables of Variables

The tables in this appendix group IPN variables by different characteristics:

- "test_ipn Variable in Sandbox" on page 40
- "IPN Variables in All Posts" on page 40
- "Buyer Information" on page 40
- "Advanced and Custom Information" on page 42
- "Shopping Cart Information" on page 43
- "Currency and Currency Exchange" on page 46
- "Auctions" on page 47
- "Mass Payment" on page 48
- "Dispute Notification Variables" on page 54
- "PDT-Specific Variables" on page 56

Transaction-Specifc Variable Values. Unless otherwise indicated in the table column labeled **Possible Values**, the value of an IPN or PDT variable is always specific to the transaction whose information is being posted.

test_ipn Variable in Sandbox

In the Sandbox environment, IPN includes the additional variable `test_ipn` with a value of `1` (one). The purpose of `test_ipn` is to provide testing programs a means to differentiate between Sanbox IPN and live IPN.

IPN Variables in All Posts

IPN Version: notify_version

The value of the `notify_version` variable is the version number of Instant Payment Notification that makes the post.

NOTE: The value `notify_version` is a means for PayPal to track versions of IPN. There is no need for your programs to store this value or query it.

Security Information: verify_sign

The value of of `verify_sign` is an encrypted string used to validate the authenticity of the transaction.

Buyer Information

TABLE 4.1 IPN and PDT Variables: Buyer Information

Variable Name	Possible Values	Description	Character Length
`address_city`		City of customer's address.	40
`address_country`		Country of customer's address.	64
`address_country_code`		Two-character ISO 3166 country code	2
`address_name`		Name used with address (included when the customer provides a Gift Address)	128
`address_state`		State of customer's address	40
`address_status`	`confirmed` `unconfirmed`	Customer provided a confirmed address. Customer provided an unconfirmed address.	

TABLE 4.1 IPN and PDT Variables: Buyer Information

Variable Name	Possible Values	Description	Character Length
address_ street		Customer's street address.	200
address_zip		Zip code of customer's address.	20
first_name		Customer's first name	64
last_name		Customer's last name	64
payer_ business_ name		Customer's company name, if customer represents a business	127
payer_email		Customer's primary email address. Use this email to provide any credits.	127
payer_id		Unique customer ID.	13
payer_ status	verified unverified	Customer has a Verified PayPal account. Customer has an Unverified PayPal account.	
residence_ country		Two-character ISO 3166 country code	2

Basic Information

TABLE A.1 IPN and PDT Variables: Basic Information

Variable Name	Possible Values	Description	Character Length
business		Email address or account ID of the payment recipient (i.e., the merchant). Equivalent to receiver_email if payment is sent to primary account, and essentially an echo of the business variable passed in the Website Payment button HTML code.	127
item_name		Item name as passed by you, the merchant. Or, if not passed by you, as entered by your customer. If this is a shopping cart transaction, PayPal will append the number of the item (e.g., item_name1, item_name2).	127
item_number		Pass-through variable for you to track purchases. It will get passed back to you at the completion of the payment. If omitted, no variable will be passed back to you.	127

TABLE A.1 IPN and PDT Variables: Basic Information

Variable Name	Possible Values	Description	Character Length
`quantity`		Quantity as entered by your customer or as passed by you, the merchant. If this is a shopping cart transaction, PayPal appends the number of the item (e.g. `quantity1`, `quantity2`).	
`receiver_email`		Primary email address of the payment recipient (i.e., the merchant). If the payment is sent to a non-primary email address on your PayPal account, the `receiver_email` will still be your primary email.	127
`receiver_id`		Unique account ID of the payment recipient (i.e., the merchant). This is the same as the recipient's referral ID.	13

Advanced and Custom Information

TABLE A.2 IPN and PDT Variables: Advanced and Custom Information

Variable Name	Possible Values	Description	Character Length
`custom`		Custom value as passed by you, the merchant. These are pass-through variables that are never presented to your customer	255
`invoice`		Passthrough variable you can use to identify your Invoice Number for this purchase. If omittted, no variable is passed back.	127
`memo`		Memo as entered by your customer in PayPal Website Payments note field.	255
`option_name1`		Option 1 name as requested by you. If this is a shopping cart transaction, see Table A.3, “IPN and PDT Variables: Shopping Cart Information” on page 43 for more information.	64
`option_name2`		Option 2 name as requested by you. If this is a shopping cart transaction, see Table A.3, “IPN and PDT Variables: Shopping Cart Information” on page 43 for more information.	
`option_selection1`		Option 1 choice as entered by your customer. If this is a shopping cart transaction, see Table A.3, “IPN and PDT Variables: Shopping Cart Information” on page 43 for more information.	200

TABLE A.2 IPN and PDT Variables: Advanced and Custom Information

Variable Name	Possible Values	Description	Character Length
option_ selection2		Option 2 choice as entered by your customer. If this is a shopping cart transaction, see Table A.3, "IPN and PDT Variables: Shopping Cart Information" on page 43 for more information.	
tax		Amount of tax charged on payment. If this is a shopping cart transaction, see Table A.3, "IPN and PDT Variables: Shopping Cart Information" on page 43 for more information.	

Shopping Cart Information

TABLE A.3 IPN and PDT Variables: Shopping Cart Information

Variable Name	Possible Values	Description
auth_id		Authorization identification number
auth_exp		Authorization expiration date and time
auth_amount		Authorization amount
auth_status		Status of authorization
remaining_ settle		Remaining amount that can be captured
mc_gross_*x*	Transaction-specific for multiple currencies	The amount is in the currency of mc_currency, where x is the shopping cart detail item number. The sum of mc_gross_x should total mc_gross.
mc_ handling_*x*	Transaction-specific for multiple currencies	The *x* is the shopping cart detail item number. The handling_cart cart-wide Website Payments variable is also included in the mc_handling variable; for this reason, the sum of mc_handling_*x* might not be equal to mc_handling
mc_ shipping_*x*	Transaction-specific for multiple currencies	This is the combined total of shipping and shipping2 WebsitePayments variables, where *x* is the shopping cart detail item number. The shipping*x* variable is only shown when the merchant applies a shipping amount for a specific item. Because profile shipping might apply, the sum of shipping*x* might not be equal to shipping.
num_cart_ items		If this is a PayPal Shopping Cart transaction, number of items in cart.

TABLE A.3 IPN and PDT Variables: Shopping Cart Information

Variable Name	Possible Values	Description
option_ name1		PayPal appends the number of the item where *x* represents the number of the shopping cart detail item (e.g., option_name1, option_name2).
option_ name2		PayPal appends the number of the item where *x* represents the number of the shopping cart detail item (e.g., option_name2, option_name2).
option_ selection1_ *x*		PayPal appends the number of the item (e.g., option_selection1, option_selection2), where *x* represents the number of the shopping cart detail item.
option_ selection2_ *x*		PayPal appends the number of the item where *x* represents the number of the shopping cart detail item (e.g., option_selection1, option_selection2).
parent_txn_ id		In the case of a refund, reversal, or canceled reversal, this variable contains the txn_id of the original transaction, while txn_id contains a new ID for the new transaction. Character length and limitations: 17
payment_ date		Time/Date stamp generated by PayPal [format: "18:30:30 Jan 1, 2000 PST"]
payment_ status	Canceled-Reversal Completed Denied Expired Failed In-Progress Partially-Refunded Pending Processed Refunded Reversed Voided	The status of the payment: Canceled-Reversal: A reversal has been canceled. For example, you won a dispute with the customer, and the funds for the transaction that was reversed have been returned to you. Completed: The payment has been completed, and the funds have been added successfully to your account balance. Denied: You denied the payment. This happens only if the payment was previously pending because of possible reasons described for the PendingReason element. Expired: This authorization has expired and cannot be captured. Failed: The payment has failed. This happens only if the payment was made from your customer's bank account. In-Progress: The transaction is in process of authorization and capture. Partially-Refunded: The transaction has been partially refunded. Pending: The payment is pending. See "pending_ reason" on page 45 for more information. Refunded: You refunded the payment. Reversed: A payment was reversed due to a chargeback or other type of reversal. The funds have been removed from your account balance and returned to the buyer. The reason for the reversal is specified in the ReasonCode element. Processed: A payment has been accepted. Voided: This authorization has been voided.

TABLE A.3 IPN and PDT Variables: Shopping Cart Information

Variable Name	Possible Values	Description
payment_type	echeck instant	echeck: This payment was funded with an eCheck. instant: This payment was funded with PayPal balance, credit card, or Instant Transfer.
pending_reason	address authorization echeck intl multi-currency unilateral upgrade verify other	This variable is set only if payment_status = Pending. address: The payment is pending because your customer did not include a confirmed shipping address and your Payment Receiving Preferences is set yo allow you to manually accept or deny each of these payments. To change your preference, go to the **Preferences** section of your **Profile**. authorization: You set <PaymentAction> Authorization</PaymentAction> on SetExpressCheckoutRequest and have not yet captured funds. echeck: The payment is pending because it was made by an eCheck that has not yet cleared. intl: The payment is pending because you hold a non-U.S. account and do not have a withdrawal mechanism. You must manually accept or deny this payment from your **Account Overview**. multi-currency: You do not have a balance in the currency sent, and you do not have your **Payment Receiving Preferences** set to automatically convert and accept this payment. You must manually accept or deny this payment. unilateral: The payment is pending because it was made to an email address that is not yet registered or confirmed. upgrade: The payment is pending because it was made via credit card and you must upgrade your account to Business or Premier status in order to receive the funds. upgrade can also mean that you have reached the monthly limit for transactions on your account. verify: The payment is pending because you are not yet verified. You must verify your account before you can accept this payment. other: The payment is pending for a reason other than those listed above. For more information, contact PayPal Customer Service.
reason_code	chargeback guarantee buyer-complaint refund other	This variable is only set if payment_status =Reversed or Refunded. chargeback: A reversal has occurred on this transaction due to a chargeback by your customer. guarantee: A reversal has occurred on this transaction due to your customer triggering a money-back guarantee. buyer-complaint: A reversal has occurred on this transaction due to a complaint about the transaction from your customer. refund: A reversal has occurred on this transaction because you have given the customer a refund. other: A reversal has occurred on this transaction due to a reason not listed above.

TABLE A.3 IPN and PDT Variables: Shopping Cart Information

Variable Name	Possible Values	Description
tax		PayPal appends the number of the item (e.g., item_name1, item_name2). The tax_*x* variable is included only if there was a specific tax amount applied to a particular shopping cart item. Because profile tax may apply to other items in the cart, the sum of tax_*x* might not total to tax.
txn_id		A unique transaction ID generated by the PayPal system. Character length and limitations: 17
txn_type	cart send_money web-accept	cart: Transaction created by customer via the PayPal Shopping Cart feature. send-money: Transaction created by customer from the **Send Money** tab on the PayPal website. web-accept: Transaction created by customer via Buy Now, Donation, or Auction Smart Logos.

Currency and Currency Exchange

TABLE A.4 IPN and PDT Variables: Currency and Currency Exchange Information

Variable Name	Possible Values	Description
exchange_rate		Exchange rate used if a currency conversion occurred.
mc_currency	See table of supported currencies.	For payment IPNs, this is the currency of the payment. For non-payment subscription IPNs, this is the currency of the subscription.
mc_fee		Transaction fee associated with the payment. mc_gross minus mc_fee will equal the amount deposited into the receiver_email account. Equivalent to payment_fee for USD payments. If this amount is negative, it signifies a refund or reversal, and either of those payment statuses can be for the full or partial amount of the original transaction fee.
mc_gross		Full amount of the customer's payment, before transaction fee is subtracted. Equivalent to payment_gross for USD payments. If this amount is negative, it signifies a refund or reversal, and either of those payment statuses can be for the full or partial amount of the original transaction.
mc_handling#		This is the total handling amount associated with the transaction. If this is a shopping cart transaction, see Table A.3, "IPN and PDT Variables: Shopping Cart Information" on page 43 for more information.
mc_shipping#		This is the total shipping amount associated with the transaction. If this is a shopping cart transaction, see Table A.3, "IPN and PDT Variables: Shopping Cart Information" on page 43 for more information.

TABLE A.4 IPN and PDT Variables: Currency and Currency Exchange Information

Variable Name	Possible Values	Description
payment_fee	Transaction-specific for USD payments only	USD transaction fee associated with the payment. payment_gross minus payment_fee equals the amount deposited into the receiver email account. Is empty for non-USD payments. This is a legacy field replaced by mc_fee. If this amount is negative, it signifies a refund or reversal, and either of those payment statuses can be for the full or partial amount of the original transaction fee.
payment_gross	Transaction-specific for USD payments only	Full USD amount of the customer's payment, before transaction fee is subtracted. Will be empty for non-USD payments. This is a legacy field replaced by mc_gross. If this amount is negative, it signifies a refund or reversal, and either of those payment statuses can be for the full or partial amount of the original transaction.
settle_amount		Amount that is deposited into the account's primary balance after a currency conversion from automatic conversion (through your Payment Receiving Preferences) or manual conversion (through manually accepting a payment).
settle_currency		Currency of settle_amount.

Auctions

TABLE A.5 IPN and PDT Variables: Auctions

Variable Name	Possible Values	Description	Character Length
auction_buyer_id		This is the customer's auction ID.	64
auction_closing_date		This is the auction's close date.	
auction_multi_item		This is the number of items purchased in multi-item auction payments. It allows you to count the mc_gross or payment_gross for the first IPN you receive from a multi-item auction (auction_multi_item), since each item from the auction will generate an Instant Payment Notification showing the amount for the entire auction.	
for_auction	true	This is an auction payment—payments made using Pay for eBay Items or Smart Logos—as well as Send Money/Money Request payments with the type **eBay items** or **Auction Goods (non-eBay)**.	

Mass Payment

TABLE A.6 IPN and PDT Variables: Mass Pay

Variable Name	Possible Values	Description
`masspay_txn_id_x`		For Mass Payments, a unique transaction ID generated by the PayPal system, where *x* is the record number of the mass pay item
`mc_currency_x`	Transaction-specific for multiple currencies	For Mass Payments, the currency of the amount and fee, where *x* is the record number the mass pay item
`mc_fee_x`	Transaction-specific for multiple Currencies	For Mass Payments, the transaction fee associated with the payment, where *x* is the record number the mass pay item
`mc_gross_x`	Transaction-specific for Multiple Currencies	The gross amount for the amount, where *x* is the record number the mass pay item
`payment_date`		For Mass Payments, the first IPN is the date/time when the record set is processed and the second IPN is the date/time when all payments are completed/returned
`payment_fee_x`	Transaction-specific for USD payments only	If the payment is USD, then the value is the same as that for `mc_fee_x`, where *x* is the record number; if the currency is *not* USD, then this is an empty string.
`payment_gross_x`	Transaction-specific for USD payments only	If the payment is USD, then the value for this is the same as that for the `mc_gross_x`, where *x* is the record number the mass pay item. If the currency is *not* USD, this is an empty string.

`payment_status`	`Completed`
	`Denied`
	`Processed`
		`Completed`: For Mass Payments, this means that all of your payments have been claimed, or after a period of 30 days, unclaimed payments have been returned to you.
		`Denied`: For Mass Payments, this means that your funds were not sent and the Mass Payment was not initiated. This may have been caused by lack of funds.
		`Processed`: Your Mass Payment has been processed and all payments have been sent.

`receiver_email_x`		For Mass Pay payments, the primary email address of the payment recipient, where *x* is the record number the mass pay item

TABLE A.6 IPN and PDT Variables: Mass Pay

Variable Name	Possible Values	Description
status_*x*	Completed Failed Reversed Pending	For Mass Payments, the status of the payment, where x is the record number Completed: The payment has been processed, regardless if this was originally a unilateral payment Failed: The payment failed because there was not enough funds in the balance Reversed: This is for unilateral payments that were not claimed after 30 days and have been returned to the Sender. Or the funds have been returned because the Receiver's account was locked. Pending: This is for unilateral payments that are unclaimed.
txn_type	masspay	This payment was sent via Mass Payment
unique_id_*x*		For Mass Payments, the unique ID from input, where *x* is the record number. This allows the merchant to cross-reference the payment

Subscriptions Variables

Along with other IPN variables, the following variables are included in Subscriptions IPNs.

TABLE A.7 Subscriptions Variables

Variable	Possible Values	Description	Character Limit
txn_type	subscr-failed subscr-cancel subscr-payment subscr-signup subscr-eot subscr-modify	subscr_signup: subscription sign-up. subscr_cancel: subscription cancellation. subscr_failed: subscription payment failure. subscr_payment: subscription payment. subscr_eot: subscription's end-of-term. subscr_modify: subscription modification.	
subscr_date		Start date or cancellation date depending on whether transaction is subscr_signup or subscr_cancel.	

TABLE A.7 Subscriptions Variables

Variable	Possible Values	Description	Character Limit
`subscr_ effective`		Date when the subscription modification will be effective (only for `txn_type = subscr_modify`).	
`period1`		(optional) Trial subscription interval in days, weeks, months, years (example: a 4 day interval is “period1: 4 D”).	
`period2`		(optional) Trial subscription interval in days, weeks, months, or years.	
`period3`		Regular subscription interval in days, weeks, months, or years.	
`amount1`		Amount of payment for trial period 1 for USD payments; otherwise blank (optional).	
`amount2`		Amount of payment for trial period 2 for USD payments; otherwise blank (optional).	
`amount3`		Amount of payment for regular subscription period for USD payments; otherwise blank.	
`mc_amount1`		Amount of payment for trial period 1, regardless of currency (optional).	
`mc_amount2`		Amount of payment for trial period 2, regardless of currency (optional).	
`mc_amount3`		Amount of payment for regular subscription period, regardless of currency.	
`mc_currency`	See table of supported currencies.	For non-payment subscriptions IPNs (i.e., `txn_type` = signup, cancel, failed, eot, or modify), this is the currency of the subscription. For payment IPNs, it is the currency of the payment (i.e., `txn_type = subscr_payment`)	
`recurring`		Indicates whether regular rate recurs (1 is yes, blank is no).	
`reattempt`		Indicates whether reattempts should occur upon payment failures (1 is yes, blank is no).	
`retry_at`		Date PayPal will retry a failed subscription payment.	
`recur_times`		The number of payment installments that will occur at the regular rate.	

TABLE A.7 Subscriptions Variables

Variable	Possible Values	Description	Character Limit
`username`		(optional) Username generated by PayPal and given to subscriber to access the subscription.	64
`password`		(optional) Password generated by PayPal and given to subscriber to access the subscription (password will be encrypted).	
`subscr_id`		ID generated by PayPal for the subscriber.	19

Variables for Each Subscription Event

The following table shows which variables are associated and can be included in IPN posts with each subscription event type.

About payment_status and txn_type with Subscription IPN. In IPN messages posted by Subscription events, the `payment_status` variable is sent *only* when a payment occurs. For all other events, the pertiunent variable is `txn_type`.

TABLE A.8 IPN Variables with Each Subscription Event

Variable	Signup	Cancel	Modify	Payment (USD)	Payment (Multi-Currency)	Failed	EOT
Basic Information							
business	X	X	X	X	X	X	X
receiver_email	X	X	X	X	X	X	X
receiver_id				X	X		
item_name	X	X	X	X	X	X	X
item_number	X	X	X	X	X	X	X
Advanced and Custom Information							
invoice	X	X	X	X	X	X	X
custom	X	X	X	X	X	X	X
option_name1	X	X	X	X	X	X	X
option_selection1	X	X	X	X	X	X	X
option_name2	X	X	X	X	X	X	X
option_selection2	X	X	X	X	X	X	X
Transaction Information							
payment_status				X	X		
pending_reason				X	X		
reason_code				X	X		
payment_date				X	X		
txn_id				X	X		
parent_txn_id				X	X		
txn_type	subscr_signup	subscr_cancel	subscr_modify	subscr_payment		subscr_failed	subscr_eot

TABLE A.8 IPN Variables with Each Subscription Event

Variable	Signup	Cancel	Modify	Payment (USD)	Payment (Multi-Currency)	Failed	EOT
Currency and Exchange information							
mc_gross				x	x		
mc_fee				x	x		
mc_currency	x	x	x	x	x	x	x
settle_amount				x	x		
exchange_rate				x	x		
payment_gross				x		x	x
payment_fee				x			
Buyer Information							
first_name	x	x	x	x	x	x	x
last_name	x	x	x	x	x	x	x
payer_business_name	x	x	x	x	x	x	
address_name	x	x	x	x	x	x	
address_street	x	x	x	x	x	x	
address_city	x	x	x	x	x	x	
address_state	x	x	x	x	x	x	
address_zip	x	x	x	x	x	x	
address_country	x	x	x	x	x	x	
payer_email	x	x	x	x	x	x	x
payer_id	x	x	x	x	x	x	x
payer_status	x	x	x	x	x	x	x
payment_type				x	x		
Subscription Information							
subscr_date	x	x	x				
subscr_effective			x				
period1	x	x	x				

TABLE A.8 IPN Variables with Each Subscription Event

Variable	Signup	Cancel	Modify	Payment (USD)	Payment (Multi-Currency)	Failed	EOT
period2	X	X	X				
period3	X	X	X				
amount1	X	X	X				
amount2	X	X	X				
amount3	X	X	X				
mc_amount1	X	X	X				
mc_amount2	X	X	X				
recurring	X	X	X				
reattempt	X	X	X				
retry_at						X	
recur_times	X	X	X				
username	X	X	X	X	X	X	X
password	X	X	X	X	X	X	X
subscr_id	X	X	X	X	X	X	X

Dispute Notification Variables

Variables related to customer dispute cases are detailed in Table A.9, “Dispute Notification Variables” on page 54.

TABLE A.9 Dispute Notification Variables

Variable	Possible Values	Description
txn_type	new_case	A new case has been registered.
txn_id		The merchant’s original transaction identification number for the payment from the buyer, against which the case was registered.

TABLE A.9 Dispute Notification Variables

Variable	Possible Values	Description
`case_id`		Case identification number. Format: PP-*nnn*-*nnn*-*nnn* where *n* is any numeric character.
`case_type`	`complaint` `chargeback`	• `complaint`: A buyer has logged a complaint through the PayPal Resolution Center. • `chargeback`: A buyer has filed a chargeback with his credit card company, which has notified PayPal of the reason for the chargeback.
`case_creation_date`	Transaction-specific	Date and time case was registered. Format: *HH*:*mm*:*ss mon DD, YYYY TZ* where *TZ* is a three-character time zone.
`reason_code`	Depends on value of `case_type`	Reason for the case.
reason_code Values for case_type complaint		
	`non_receipt`	Buyer claims that he did not receive goods or service.
	`not_as_described`	Buyer claims that the goods or service received differ from merchant's description of the goods or service.
reason_code Values for case_type chargeback		
	`unauthorized`	Buyer claims that he did not authorize transaction.
	`non_receipt`	Buyer claims that he did not receive goods or service.
	`duplicate`	Buyer claims that a possible duplicate payment was made to the merchant.
	`merchandise`	Buyer claims that the received merchandise is unsatisfactory, defective, or damaged.
	`special`	Some other reason. Usually, `special` indicates a credit card processing error for which the merchant is not responsible and for which no debit to the merchant will result. PayPal must review the documentation from the credit card company to determine the nature of the dispute and possibly contact the merchant to resolve it.

PDT-Specific Variables

The following variables apply *only* to PDT.

TABLE A.10 PDT-Specific Variables

Variable	Description
`tx`	Transaction ID/PDT token
`st`	Transaction status
`amt`	Amount of the transaction
`cc`	Currency code
`cm`	Custom message

B Downloadable History Log Columns and Values

TABLE B.1 Downloadable History Log Columns and Values

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
Date	Date transaction was initiated (according to PayPal system time, US-Pacific time zone). Log sorted in reverse chronological order by Date (most recent first)	[M]M/[D]D/YYYY		`payment_date` `subscr_date`
Time	Time transaction was initiated (according to PayPal system time, US-Pacific time zone).	HH:MM:SS		
Timezone	The time zone used for recording transactions in your PayPal account.	Alphanumeric; three-character codes		
Name	Name of counterparty. If counterparty is a PayPal verified user, this field will contain the user's first and last name. If counterparty is not a verified user, field will contain the user's email address.	alphanumeric; 128-character limit	`first_name` `last_name`	

TABLE B.1 Downloadable History Log Columns and Values

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
Type	Type of transaction: Add Funds from a Bank Account ATM Withdrawal ATM Withdrawal Reversal Auction Payment Received Auction Payment Sent Canceled Fee Canceled Payment Canceled Transfer Chargeback Settlement Check Withdrawal from PayPal Currency Conversion Debit Card Cash Advance Debit Card Purchase Dividend From PayPal Money Market eCheck Received eCheck Sent Funds Added with a Personal Check Guarantee Reimbursement Payment Received Payment Sent PayPal PayPal Balance Adjustment Referral Bonus Refund Shopping Cart Payment Received Shopping Cart Payment Sent Subscription Payment Received Subscription Payment Sent Transfer Update to Add Funds from a Bank Account Update to Debit Card Credit Update to eCheck Received Update to Payment Received Update to Payment Sent Update to Reversal Update to Web Accept Payment Received Virtual Debit Card Authorization Virtual Debit Card Credit Received Virtual Debit Card Purchase Virtual Debt Card Credit Received Web Accept Payment Received Web Accept Payment Sent Withdraw Funds to a Bank Account	alphanumeric; 39-character limit		`txn_type`

TABLE B.1 Downloadable History Log Columns and Values

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
Status	Status of transaction at time of download: Canceled Cleared Completed Denied Expired Failed Pending Refunded Returned Reversed Unclaimed Uncleared	alphanumeric; 10-character limit		`payment_status` `pending_reason`
Subject	Subject of transaction as entered by counterparty	alphanumeric; 256-character limit		

Currency	Currency of transaction	alphanumeric; three character limit	`currency_code`	`mc_currency`
				`settle_currency`
				`exchange_rate`
				`mc_gross`

Gross	Gross amount of transaction	signed decimal	`amount`	`payment_gross`
				`settle_amount`
				`amount1`
				`amount2`
				`amount3`

Fee	Fee (if applicable) for transaction	signed decimal		`payment_fee` `mc_fee`
Net	Net amount of transaction	signed decimal		
Note	Note for transaction as entered by counterparty	alphanumeric; 2000-character limit		
From Email Address	Email address of transaction sender	alphanumeric; 128-character limit		`payer_email`

TABLE B.1 Downloadable History Log Columns and Values

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
To Email Address	Email address of transaction recipient	alphanumeric; 128-character limit	`business`	`receiver_email`
Transaction ID	PayPal-generated unique transaction ID	alphanumeric; 17-character limit		`txn_id`
Payment Type	Payment type used for transaction: eCheck Instant PayPal Funds	alphanumeric; 27-character limit		`payment_type`
Counterparty Status	Account status of buyer: International – Unverified International – Verified Unverified Verified	alphanumeric; 27-character limit		`payer_status`
Address Status	Status of counterparty's Shipping Address. Confirmed Non-confirmed	alphanumeric; 14-character limit		`address_status`
Item Title	Specified by buyer in the website field: • Auction/Item Title Or by seller in any of the following button-creation fields: • PayPal Shopping Cart Item Name • Buy Now Item Name • Donations Item Name • Subscriptions Name	alphanumeric; 128-character limit	`item_name`	`item_name`
Item ID	Specified by buyer in the website field: • Auction/Item Number Or by seller in any of the following button-creation fields: • PayPal Shopping Cart Item Number • Buy Now ID Number • Donations ID Number • Subscription Reference Number	alphanumeric; 256-character limit	`item_number`	`item_number`

TABLE B.1 Downloadable History Log Columns and Values

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable

Shipping Amount	Specified by buyer in the website field:
	• eBay/Auction Shipping amount
	Or by seller in any of the following button-creation fields:
	• PayPal Shopping Cart Shipping amount
	• Buy Now Shipping amount
		unsigned decimal	`shipping`
			`shipping2`
			`handling`	

Insurance Amount	Specified by buyer in the website field: • eBay/Auction Insurance amount	unsigned decimal		
Sales Tax	Sales Tax Amount specified in seller's button-creation process and Profile preferences	unsigned decimal	`tax`	
Option 1 Name	Specified by seller in any of the following button-creation fields: • PayPal Shopping Cart Option 1 Name • Buy Now Option 1 Name Subscription Option 1 Name	alphanumeric; 60-character limit	`on0`	`option_name1`
Option 1 Value	Entered by buyer in any of the following website fields: • PayPal Shopping Cart Option 1 Value • Buy Now Option 1 Value • Subscription Option 1 Value Or specified by seller in any of the following button-creation fields: • PayPal Shopping Cart Value 1 Choices • Buy Now Value 1 Choices • Subscription Value 1 Choices	alphanumeric; 30-character limit	`on1`	`option_name2`
Option 2 Name	Specified by seller in any of the following button-creation fields: • PayPal Shopping Cart Option 2 Name • Buy Now Option 2 Name • Subscription Option 2 Name	alphanumeric; 60-character limit	on1	`option_selection1`

TABLE B.1 Downloadable History Log Columns and Values

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
Option 2 Value	Entered by buyer in any of the following website fields: • PayPal Shopping Cart Option 2 Value • Buy Now Option 2 Value • Subscription Option 2 Value Or specified by seller in any of the following button-creation fields: • PayPal Shopping Cart Value 2 Choices • Buy Now Value 2 Choices • Subscription Value 2 Choices	alphanumeric; 30-character limit	os1	`option_ selection2`
Auction Site	Name of Auction Site: • eBay • Yahoo! Auctions • uBid.com • Amazon.com Auctions • MSN Auctions • BidVille • Other	alphanumeric; 20-character limit		
Item URL	URL of eBay/Auction Item (eBay/Auction-specific)	alphanumeric; 256-character limit		
Closing Date	Close date of eBay/Auction Item (eBay/Auction-specific)	[M]M/[D]D/YYYY		
Reference Txn ID	Transaction ID of parent transaction	alphanumeric; 17-character limit		
Invoice Number	Specified by seller in any of the following button-creation fields: • PayPal Shopping Cart Invoice Number • Buy Now Invoice Number • Subscription Invoice Number	alphanumeric	`invoice`	`invoice`
Subscription Number	PayPal-generated Subscription Transaction ID Number S-*xxxxxxxxxxxxxxx* where *x* is the transaction ID.	alphanumeric; 19-character limit		`subscr_id`

TABLE B.1 Downloadable History Log Columns and Values

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
Custom Number	Specified by seller in any of the following button-creation fields: • PayPal Shopping Cart Custom Number • Buy Now Custom Number • Subscription Custom Number	alphanumeric	`custom`	`custom`
Shipping Address Line 1	First line of shipping address as specified by counterparty	alphanumeric; 395-character limit		`address_ street1`
Shipping Address Line 2	Second line of shipping address as specified by counterparty (if applicable)	alphanumeric; 395-character limit		`address_ street2`
Town/City	Town/City of shipping address as specified by counterparty	alphanumeric		`address_city`
State/Province/Region/County/Territory/Prefecture/Republic	State/Province/Region/Territory/Prefecture/Republic of shipping address as specified by counterparty			`address_stat e`
Zip/Postal Code	Zip/Postal Code of shipping address as specified by counterparty			`address_zip`
Country	Country of shipping address as specified by counterparty			`address_ country`
Balance	Account balance at time of transaction. Balance is reported in the currency that transaction was received in	signed decimal		

C Country Codes

ISO 3166 Standard Country Codes

PayPal relies on two-character country codes defined by International Standards Organization (ISO) 3166.

TABLE C.1 ISO 3166 Two-Character Country Codes

Country	Code
Anguilla	AI
Argentina	AR
Australia	AU
Austria	AT
Belgium	BE
Brazil	BR
Canada	CA
Chile	CL
China	CN
Costa Rica	CR
Cyprus	CY
Czech Republic	CZ
Denmark	DK
Dominican Republic	DO
Ecuador	EC
EE	Estonia
Finland	FI
France	FR
Germany	DE
Greece	GR
Hong Kong	HK

TABLE C.1 ISO 3166 Two-Character Country Codes

Country	Code
Hungary	HU
Iceland	IS
India	IN
Ireland	IE
Israel	IL
Italy	IT
Jamaica	JM
Japan	JP
Latvia	LV
Lithuania	LT
Luxembourg	LU
Malaysia	MY
Malta	MT
Mexico	MX
Netherlands	NL
New Zealand	NZ
Norway	NO
Poland	PL
Portugal	PT
Singapore	SG
Slovakia	SK
Slovenia	SI
South Africa	ZA
South Korea	KR
Spain	ES
Sweden	SE
Switzerland	CH
Taiwan	TW

TABLE C.1 ISO 3166 Two-Character Country Codes

Country	Code
Thailand	TH
Turkey	TR
United Kingdom	GB
United States	US
Uruguay	UY
Venezuela	VE

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